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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,638	06/05/2006	Coen Theodorus Hubertus Liedenbaum	FR040118	5416

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
P.O. BOX 3001  
BRIARCLIFF MANOR, NY 10510

EXAMINER
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BOUSIKARIS, LEONIDAS

ART UNIT	PAPER NUMBER
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2872

MAIL DATE	DELIVERY MODE
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08/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/581,638

Applicant(s)

LIEDENBAUM ET AL.

Examiner

Leo Boutsikaris

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/5/06</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "301" and "314" are not shown in Fig. 3a. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods (US 7,116,626) in view of Visel (US 5,511,058) and Watanabe (EP 0507599A2).

Regarding claims 1, 7, Woods discloses a holographic recording and read-out system (Fig. 1A), wherein holographic data in the form of data pages (see Fig. 3) is recorded in a holographic medium 124. During read-out, a reference beam is illuminated onto the holographic medium, and a selected data page is imaged onto photodetector 128 via lens 126 (lines 10-29, col. 6). Furthermore, Woods teaches that due to misalignment between various components of the systems, e.g., the SLM 116, detector 128 and holographic medium 124, an error in the correct reading of the data occurs based on the detected image; caused by the misalignment between the imaged data pixels and the detector pixels (lines 30-36, col. 6). Various servo microcontrollers 117, 129 are used to alter the position of the above components based on feedback signals from the detector, so that the performance of the holographic storage device is improved (lines 37-50, col. 6). Woods discloses that various metrics are used as the basis for the feedback signals to correct the misalignment problems, including channel metrics (e.g., average intensity per page, SNR per page, BER per page, etc., see line 58, col. 7 to line 15, col. 8), or page metrics (e.g., known pixel patterns or registration marks, see lines 50-67, col. 9). Once, the appropriate metric is chosen, the feedback signal is read, and the various components are controllably moved so that the metric-based performance is optimized (line 58, col. 7 to line 4, col. 8).

However, in the above misalignment-correction method, one of the metrics used to correct the position of the various elements is not the claimed Moire pattern in the detected

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imaged data page. Visel discloses a method for correcting misaligned holographic data image in a holographic data storage system, wherein it is taught that in such a system, individual (imaged) data pixels may have a slight offset relative to the associated CCD detector's pixels, which in turn causes Moire patterns in the detected image (lines 48-56, col. 1). Watanabe discloses a method for aligning the relative position of elements of an LCD device 42 with respective elements of a superimposed microlens array 44 (Figs. 1, 2), wherein it is taught that the shape of the Moire pattern created when light illuminates the above two structures changes in accordance with the degree of misplacement of the pixels of the LCD device and the microlenses 46 (lines 31-36, col. 8). Hence, a position-detecting device monitors the Moire pattern, for positional alignment of the two elements (lines 4-9, col. 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Moire patterns formed by the imaged data page as it is superimposed onto the CCD detector, as one of the metrics in the alignment method of Woods, as taught by Visel and Watanabe, since observation of the imaged data pages is a lot simpler computational method compared to methods using the highly computationally involved metrics taught by Woods, such as average intensity values, SNR, BER, etc.

Regarding claims 2-4, Woods teaches that typical causes for the misalignment (and therefore candidates for changing during the alignment process) are magnification, translation and the like (lines 36-46, col. 7). It is noted that a rotation of the imaged data is one type of degradation of the detected image.

Regarding claim 5, Woods in view of Visel and Watanabe discloses all the limitations of said claim except for teaching that detected imaged data page is filtered by a high frequency spatial filter prior to the processing of the Moire information. It would have been obvious to one

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of ordinary skill in the art at the time the invention was made to use a low-pass spatial filter in the path of the imaged data page, since Official Notice is taken that using low-pass spatial filters in free space optical systems is widely known, for reducing the higher spatial frequencies from propagating in the system and causing higher noise.

Regarding claim 6, Watanabe teaches that detection of the Moire pattern comprises the measuring/detection of the contrast between bright and dark areas in the detected image (see Figs. 2-4, lines 36-52, col. 8).

Regarding claim 8, the system of Woods includes a micro-processor 136 that communicates with the micro-controller 117 and the other components of the system to carry out the alignment process (lines 35-37, col. 5).

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308. The examiner can normally be reached on M-F, 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leo Boutsikaris, Ph.D., Esq.  
Primary Patent Examiner, AU 2872  
August 24, 2007



**LEONIDAS BOUTSIKARIS**  
**PRIMARY EXAMINER**